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Manual
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Engineering and Design
SAFETY and HEALTH ASPECTS
of
HAZARDOUS, TOXIC, AND RADIOACTIVE WASTE
REMEDIATION TECHNOLOGIES

1. **Purpose.** This manual identifies and analyzes generic safety and health hazards for 25 remediation technologies used in clean-up operations at Hazardous, Toxic, and Radioactive Waste (HTRW) sites throughout the country. This EM is intended for use by U.S. Army Corps of Engineers (USACE) project managers, technical design personnel, and safety and health professionals at all levels, and technical USACE contractor personnel responsible for worker safety and health during all phases of remediation.

2. **Applicability.** This EM applies to all HQUSACE elements and USACE commands responsible for HTRW remediation projects.

3. **References.** References are listed in Appendix A.

4. **Distribution.** Approved for public release, distribution is unlimited.

5. **Discussion.** This manual provides the user with guidance for identifying unique or significant safety and health hazards associated with each of the 25 technologies addressed. Each chapter includes a brief technology description, hazard analysis, and a control point list, designating groups affected by and responsible for the hazards.

Users of this manual are cautioned to utilize the information provided with clear knowledge of specific project requirements and professional judgement. While every attempt has been made to identify hazards of special concern, the manual is not intended to be an all encompassing analyses identifying each and every physical, chemical, radiological, or biological hazard associated with the 25 remediation technologies treated. It is critical for the user, especially those with less professional safety and health training or knowledge, to recognize that the hazard analyses presented in this EM are starting points rather than end points in evaluating the remediation technologies addressed. Each hazard analysis presented must be considered generic and not specific to actual site conditions.

The user of this EM in the end must use all the resources available in identifying project-specific hazards.

FOR THE COMMANDER:

RUSSELL L. FUHRMAN
Major General, USA
Chief of Staff

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